<u>REMARKS</u>

I. INTRODUCTION

In response to the Office Action dated January 13, 2005, claims 58-60 have been amended. Claims 1-7, 9-16, 18-26, 28-35, 37-45, 47-54, 56, and 57-60 remain in the application. Entry of these amendments, and re-consideration of the application, as amended, is requested.

II. CLAIM AMENDMENTS

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III. PRIOR ART REJECTIONS

In paragraphs (4)-(5) of the Office Action, claims 1-7, 9-16, 18-26, 28-35, 37-45, 47-54, 56, and 57 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown et al., U.S. Patent No. 6,067,551 (Brown), Kumar et al., U.S. Patent No. 6,342,906 (Kumar), and Caronni et al., U.S. Patent No. 6,195,751 (Caronni). Applicants respectfully traverse these rejections.

Specifically, the independent claims were rejected as follows:

> With regard to claim 1, Brown teaches a method of collaborating users access to a document on a network (see column 2, lines 48-65), storing a document on a server (see column 2, lines 56-61), receiving a request, in the server, to open the document (see column 10, lines 65 through column 11, line 3), establishing a collaboration session where the sever permits two or more users to work simultaneously across a network on a document stored on the server (see column 2, liens 46-65), receiving a command to modify the document from a first user in the session (see column 3, lines 30-34), and the server distributing the command to modify to the other ones of the collaborators in the session (see column 4, lines 7-26). Brown, however, doesn't explicitly state that the document being shared is a drawing document. Kumar teaches as system of collaborating with a group of users on a project (see column 3, lines 33-51), similar to that of Brown, but further teaches the data in the shared workspace being a drawing document (see column 3, lines 39-51). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown and Kumar before him at the time the invention was made to modify the collaborating system of Brown to share drawing documents. One would have been motivated to make such a combination because Brown states that the system can be implemented with other types of documents, where a drawing document as used in Kumar is an obvious choice. Brown further teaches, in column 1, lines 45-55, that the user regularly accesses common documents from the server, but doesn't specifically teach collaborators communicating the modifications of documents through the use of heartbeat commands regularly transmitted at defined intervals. Caronni teaches a system in which there is a group collaboration session between a plurality of users, in which revision information is passed between users (see column 6, lines 4-19 and column 12, lines 15-25), similar to that of Brown and Kumar, but further teaches, the transmission of updated revised information being transmitted by regularly transmitted heartbeat messages (see column 11, line 61 through column 12, lines 52). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown, Kumar, and Caronni before him at the time the invention was made

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to modify the notification system of Brown and Kumar to include the use of heartbeat commands, as did Caronni. One would have been motivated to make such a combination because in a system in which the current document must be kept up to date with the most current version of a document a regularly transmitted signal (such as heartbeat messages) would provide continual updating.

With regard to claim 12, Brown teaches a method of collaborating users access to a document on a network (see column 2, lines 48-65), establishing a collaboration session where the sever permits two or more users to work simultaneously across a network on a document stored on the server (see column 2, liens 46-65), and receiving a command to modify the document from a first user in the session (see column 3, lines 30-34). Brown, however, doesn't explicitly state that the document being shared is a drawing document. Kumar teaches as system of collaborating with a group of users on a project (see column 3, lines 33-51), similar to that of Brown, but further reaches the data in the shared workspace being a drawing document (see column 3, lines 39-51). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown and Kumar before him at the time the invention was made to modify the collaborating system of Brown to share drawing documents. One would have been motivated to make such a combination because Brown states that the system can be implemented with other types of documents, where a drawing document as used in Kumar is an obvious choice. Brown further teaches, in column 1, lines 45-55, that the user regularly accesses common documents from the server, but doesn't specifically teach collaborators communicating the modifications of documents through the use of heartbeat commands regularly transmitted at defined intervals. Caronni teaches a system in which there is a group collaboration session between a plurality of users, in which revision information is passed between users (see column 6, lines 4-19 and column 12, lines 15-25), similar to that of Brown and Kumar, but further teaches, the transmission of updated revised information being transmitted by regularly transmitted heartbeat messages (see column 11, line 61 through column 12, line 52). It would have been obvious to one or ordinary skill in the art, having the teachings of Brown, Kumar, and Caronni before him at the time the invention was made to modify the notification system of Brown and Kumar to include the use of heartbeat commands, as did Caronni. One would have been motivated to make such a combination because in a system in which the current document must be kept up to date with the most current version of a document a regularly transmitted signal (such as heartbeat messages) would provide continual updating.

With regard to claim 20, Brown teaches, a system with a shard disk on a network and use of a shared server (see column 2, lines 46-62), a method of collaborating users access to a document on a network (see column 2, lines 48-65), a computer program stored on the server (see column 4, lines 7-11), storing a document on a server (see column 2, lines 56-61), receiving a request, in the server, to open the document (see column 10, lines 65 through column 11, line 3), establishing a collaboration session where the sever permits two or more users to work simultaneously across a network on a document stored on the server (see column 2, liens 46-65), receiving a command to modify the document from a first user in the session (see column 3, lines 30-34), and the server distributing the command to modify to the other ones of the collaborators in the session (see column 4, lines 7-26). Brown, however, doesn't explicitly state that the document being shared is a drawing document. Kumar teaches as system of collaborating with a group of users on a project (see column 3, lines 33-51), similar to that of Brown, but further reaches the data in the shared workspace being a drawing document (see column 3, lines 39-51). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown and Kumar before him at the time the invention was made to modify the collaborating system of Brown to share drawing documents. One would have been motivated to make such a combination because Brown states that the system can be implemented with other types of documents, where a drawing document as used in Kumar is an obvious choice. Brown further teaches, in column 1, lines 45-55, that the user regularly accesses common documents from the server, but doesn't specifically teach collaborators communicating the modifications of documents through the use of heartbeat commands regularly transmitted at defined intervals. Caronni teaches a system in which there is a group collaboration session between a plurality of users, in which revision information is passed between users (see column 6, lines 4-19 and column 12, lines 15-25), similar to that of Brown and Kumar, but further teaches, the transmission of updated revised information being

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transmitted by regularly transmitted heartbeat messages (see column 11, line 61 through column 12, line 52). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown, Kumar, and Caronni before him at the time the invention was made to modify the notification system of Brown and Kumar to include the use of heartbeat commands, as did Caronni. One would have been motivated to make such a combination because in a system in which the current document must be kept up to date with the most current version of a document a regularly transmitted signal (such as heartbeat messages) would provide continual updating.

With regard to claim 31, Brown teaches, a system with a shard disk on a network and use of a shared server (see column 2, lines 46-62), a method of collaborating users access to a document on a network (see column 2, lines 48-65), a computer program stored on the server (see column 4, lines 7-11), storing a document on a server (see column 2, lines 56-61), establishing a collaboration session where the sever permits two or more users to work simultaneously across a network on a document stored on the server (see column 2, liens 46-65), and receiving a command to modify the document from a first user in the session (see column 3, lines 30-34). Brown, however, doesn't explicitly state that the document being shared is a drawing document. Kumar teaches as system of collaborating with a group of users on a project (see column 3, lines 33-51), similar to that of Brown, but further teaches the data in the shared workspace being a drawing document (see column 3, lines 39-51). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown and Kumar before him at the time the invention was made to modify the collaborating system of Brown to share drawing documents. One would have been motivated to make such a combination because Brown states that the system can be implemented with other types of documents, where a drawing document as used in Kumar is an obvious choice. Brown further teaches, in column 1, lines 45-55, that the user regularly accesses common documents from the server, but doesn't specifically teach collaborators communicating the modifications of documents through the use of heartbeat commands regularly transmitted at defined intervals. Caronni teaches a system in which there is a group collaboration session between a plurality of users, in which revision information is passed between users (see column 6, lines 4-19 and column 12, lines 15-25), similar to that of Brown and Kumar, but further teaches, the transmission of updated revised information being transmitted by regularly transmitted heartbeat messages (see column 11, line 61 through column 12, line 52). It would have been obvious to one or ordinary skill in the art, having the teachings of Brown, Kumar, and Caronni before him at the time the invention was made to modify the notification system of Brown and Kumar to include the use of heartbeat commands, as did Caronni. One would have been motivated to make such a combination because in a system in which the current document must be kept up to date with the most current version of a document a regularly transmitted signal (such as heartbeat messages) would provide continual updating.

With regard to claim 39, Brown teaches a computer readable medium which performs a method of collaborating users access to a document on a network (see column 2, lines 48-65), storing a document on a server (see column 2, lines 56-61), receiving a request, in the server, to open the document (see column 10, lines 65 through column 11, line 3), establishing a collaboration session where the sever permits two or more users to work simultaneously across a network on a document stored on the server (see column 2, liens 46-65), receiving a command to modify the document from a first user in the session (see column 3, lines 30-34), and the server distributing the command to modify to the other ones of the collaborators in the session (see column 4, lines 7-26). Brown, however, doesn't explicitly state that the document being shared is a drawing document. Kumar teaches as system of collaborating with a group of users on a project (see column 3, lines 33-51), similar to that of Brown, but further teaches the data in the shared workspace being a drawing document (see column 3, lines 39-51). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown and Kumar before him at the time the invention was made to modify the collaborating system of Brown to share drawing documents. One would have been motivated to make such a combination because Brown states that the system can be implemented with other types of documents, where a drawing document as used in Kumar is an obvious choice. Brown further teaches, in column 1, lines 45-65, that the user regularly accesses common documents from the server, but doesn't specifically teach collaborators communicating the modifications of documents through

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the use of heartbeat commands regularly transmitted at defined intervals. Caronni teaches a system in which there is a group collaboration session between a plurality of users, in which revision information is passed between users (see column 6, lines 4-19 and column 12, lines 15-25), similar to that of Brown and Kumar, but further teaches, the transmission of updated revised information being transmitted by regularly transmitted heartbeat messages (see column 11, line 61 through column 12, line 52). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown, Kumar, and Caronni before him at the time the invention was made to modify the notification system of Brown and Kumar to include the use of heartbeat commands, as did Caronni. One would have been motivated to make such a combination because in a system in which the current document must be kept up to date with the most current version of a document a regularly transmitted signal (such as heartbeat messages) would provide continual updating.

With regard to claim 50, Brown teaches a computer readable medium which performs a method of collaborating users access to a document on a network (see column 2, lines 48-65), establishing a collaboration session where the sever permits two or more users to work simultaneously across a network on a document stored on the server (see column 2, liens 46-65), and receiving a command to modify the document from a first user in the session (see column 3, lines 30-34). Brown, however, doesn't explicitly state that the document being shared is a drawing document. Kumar teaches as system of collaborating with a group of users on a project (see column 3, lines 33-51), similar to that of Brown, but further teaches the data in the shared workspace being a drawing document (see column 3, lines 39-51). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown and Kumar before him at the time the invention was made to modify the collaborating system of Brown to share drawing documents. One would have been motivated to make such a combination because Brown states that the system can be implemented with other types of documents, where a drawing document as used in Kumar is an obvious choice. Brown further teaches, in column 1, lines 45-55, that the user regularly accesses common documents from the server, but doesn't specifically teach collaborators communicating the modifications of documents through the use of heartbeat commands regularly transmitted at defined intervals. Caronni teaches a system in which there is a group collaboration session between a plurality of users, in which revision information is passed between users (see column 6, lines 4-19 and column 12, lines 15-25), similar to that of Brown and Kumar, but further teaches, the transmission of updated revised information being transmitted by regularly transmitted heartbeat messages (see column 11, line 61 through column 12, line 52). It would have been obvious to one of ordinary skill in the art, having the teachings of Brown, Kumar, and Caronni before him at the time the invention was made to modify the notification system of Brown and Kumar to include the use of heartbeat commands, as did Caronni. One would have been motivated to make such a combination because in a system in which the current document must be kept up to date with the most current version of a document a regularly transmitted signal (such as heartbeat messages) would provide continual updating.

Applicants traverse the above rejections for one or more of the following reasons:

(1) Brown, Kumar, and Caronni do not teach, disclose or suggest the use of a heartbeat command that comprises a command to modify a drawing document;

(2) Brown, Kumar, and Caronni do not teach, disclose or suggest sending a heartbeat command to a server and then sending a second heartbeat command from the server to multiple collaborators in a collaboration session; and

(3) Brown, Kumar, and Caronni do not teach, disclose or suggest displaying a collaboration palette containing information on collaborators in the session.

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Independent claims 1, 12, 20, 31, 39, and 50 are generally directed to collaborating access to a drawing document on a server. Specifically, a drawing document is stored on a server and collaborators may view and work simultaneously on the server-based drawing document. The collaborators view changes to the document made by other collaborators in real time. Such real-time viewing is enabled using heartbeat commands. The heartbeat command, as claimed, is a command that is regularly transmitted at defined intervals. Further the claims specifically provide that the heartbeat command comprises a command (by one collaborator) to modify the drawing document. The server then distributes the command to modify the drawing document to other collaborators as part of an additional heartbeat command. Accordingly, the server maintains the document and enables simultaneous real-time viewing of the document using commands that are regularly transmitted at defined intervals. The cited references do not teach nor suggest these various elements of Applicants' independent claims.

In addition, Applicants note that original dependent claims 16, 35, and 54 specifically provide for displaying a collaboration palette that provides information relating to the collaborators in the collaboration session. New claims 58-60 provide similar limitations.

Brown merely describes a word processing program module having a multi-user editing capability provided for by the utilization of a multi-user control file (MCF) that is created when a document is first accessed. Thus, as admitted in the Office Action, Brown fails to address collaboration on a drawing document. Further, as clearly illustrated throughout Brown, Brown merely enables the use of duplicate copies on a local client. The users edit their respective local copies. Thereafter, the only time that the word processing document is updated with the server and the other users is when a user saves a change to a document locally. (See col. 2, lines 48- col. 3, line 6).

Thus, unlike the present claims, Brown fails to provide for the use of a regularly transmitted heartbeat command that is sent by the client to the server. Instead, Brown is forced to wait until a local client saves a local copy thereby causing a reconciliation process to begin. Such processing in Brown fails to provide for real-time simultaneous viewing and working with a document. In this regard, Brown fails to provide for a "collaboration" session as used in the claims. Instead, Brown merely describes sharing access to a document.

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The Kumar reference also fails to cure the defects of Brown. Firstly, Kumar fails to teach the use of a server to maintain and store the drawing document during the collaboration as claimed. Secondly, Kumar fails to teach, describe, or suggest, implicitly or explicitly, the use of a heartbeat command that is transmitted at regular defined intervals as claimed. Instead, Kumar teaches the completion (i.e., fully processing) of a modification (and any update engendered by it). Once completed, a serialized modification is sent to a collaborator (see col. 6, lines 58-67). Thus, Kumar does not teach the claimed transmission of a regular command at a defined interval.

The final Office Action admits that both Brown and Kumar fail to teach the hearbeat command of the present claims. Instead, the Action relies on Caronni to teach the system. However, Caronni fails in numerous aspects and actually teaches away from the invention as claimed. The primary difference between Caronni and the present invention relates to what the heartbeat command consists of. As specifically claimed, the heartbeat comprises "a command to modify the drawing document". Caronni completely fails to teach such a heartbeat command. Instead, Caronni's heartbeat command is merely a message that distributes a key to perform key translations that enables multiple collaborators to view collaboration messages (see col. 11, lines 15-18). Caronni's detailed description consistently states that the heartbeat commands relate to the transmission of the keys used to decode/encrypt the actual collaboration messages (see col. 11, lines 15-18, col. 11, line 51-col. 12, line 25, col. 12, lines 40-52, col. 13, lines 16-20, col. 13, lines 52-54, col. 13, line 66-col. 14, line 2, col. 14, line 8-29, col. 18, lines 49-55, etc.). As an example, col. 12, lines 15-25 provide:

> The heartbeat contains for each key the key's ID (e.g., a bit-value pair describing the key's location in database 300), version information, and revision information. In the distributed flat implementation the heartbeat message also includes the owner ID for each key. In early phases of group construction in the distributed flat implementation no previous common key exists, multiple creations of the same key are resolved as described below with respect to leave operations, except that a unicast connection is opened between the key holders to establish a previous key.

As can be seen from the above text, Caronni's heartbeat clearly relates to the key distribution system of the invention. In fact, nowhere in Caronni is there any description or suggestion, explicit or implicit, that the heartbeat command contains a modification to a drawing or any substantive text. Instead, Caronni consistently states that the keys received as part of the heartbeat command are used to encrypt actual data (see col. 14, lines 8-29). Further, col. 14, lines 23-26 specifically states that the keys are transmitted separately from the data itself. In this regard, Applicants also note that the

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present specification distinguishes the heartbeat command as claimed from commands relating to version information, establishing a session, etc. (see pages 13-38 of the present invention).

In addition to the above, Applicants submit that Caronni actually teaches away from the present invention. Specifically, in the presently claimed invention, the collaboration session allows collaborators to view and work simultaneously wherein the collaborators can view modifications to the drawing (made by another collaborator) in real time. As part of this collaboration process, the heartbeat command is used to send the modifications to the drawing. Accordingly, if a particular collaborator does not view or ignores a heartbeat command, the collaborator may not view, in real time, the modifications to the drawing document. Such collaboration and viewing of modifications to a drawing cannot be accomplished with Caronni's heartbeat command. Instead, since Caronni's heartbeat command relates to keys for collaborators in a collaboration session, col. 12, lines 48-52 specifically provides:

> The prospective new participant is only interested in at most W of the heartbeat messages and collects a table of owners of keys which he needs, and which are owned by different participants.

Thus, in Caronni, certain heartbeat command may be ignored by participants. In this regard, participants may only be interested in a subset of the heartbeat messages and not all of them. Such a teaching is clearly distinguishable and teaches away from the present invention. Again, Caronni's heartbeat commands are specifically used as part of the key distribution and management system. In this regard, Caronni's heartbeats do not comprise a "modification to the drawing document" as claimed.

In addition, Applicants also note that in the present invention, the server maintains the drawing document and receives the heartbeat command with the modification to the drawing document. In response, the server transmits the modification as part of a second heartbeat command to other collaborators in the session. Such a structure is not even remotely suggested in Caronni.

Caronni sets forth two different types of collaboration sessions. In one type of session (referred to as a distributed flat implementation), multiple users collaborate with each other in a distributed environment. In such a scenario, no single server or location is used for a drawing document. Further, every participant has knowledge of group membership, and so every participant includes storage space for holding keying information shared with group members (see col. 5, lines 48-55). In the second type of session (referred to as a centralized flat implementation),

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communication is unidirectional wherein a single person transmits or broadcasts to a group (see col. 7, lines 59-63). Thus, under either implementation, Caronni fails to teach a server receiving and then distributing heartbeat commands with drawing changes (as claimed). Again, the current claims provide for any one of the collaborators to modify a drawing document and send the modification as part of a heartbeat command to a server which then distributes the modification as part of a second heartbeat command to the remaining collaborators. No such structure or model is used in either of Caronni's implementations. Instead, Caronni's heartbeat commands are send from one participant to another participant (in the distributed flat implementation) or from one sender to everyone (under the centralized flat implementation). Accordingly, Caronni (and the other cited references) fail to teach the use and implementation of the heartbeat commands as specifically claimed.

In addition to the above, Applicants note new claims 58-60 and prior claims 16, 35, and 54. Firstly, the new claims provide near identical limitations as prior claims 16, 35, and 54. Accordingly, no new search and or consideration is necessary at this time. In addition, Applicants submit that these claims specifically provide for displaying a collaboration palette with information relating to collaborators in the collaboration session.

In rejecting these claims, the Office Action merely provides that the limitations relate to maintaining a record of the collaboration session including name, numbers, and statuses of the collaborators and a record file for a user containing a name, a date/time number, and a user version identifier. However, such a teaching completely fails to address the primary limitation of these claims relating to the display of a collaboration palette. In this regard, the mere existence of a record or record file completely fails to even remotely describe, suggest, or allude to the display of such information to a user in a collaboration session. The display of collaboration user information provides a unique ability to inform collaborators who is currently in the collaboration session. The mere recordation of the information in a file to "keep track of the edits from each user before the edits of one user can be used to overwrite the master copy" (see col. 11, lines 3-8) is not even remotely similar to displaying user information nor does it provide the advantage or ability to inform users of those that are participating in the collaboration session. In this regard, the Office Action fails to address specific limitations in the dependent claims. Further, the prior art fails to address such limitations.

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In view of the above, the various elements of Applicants' claimed invention together provide operational advantages over the systems disclosed in Brown, Kumar, and Caronni. In addition, Applicants' invention solves problems not recognized by Brown, Kumar, and Caronni.

Thus, Applicants submit that independent claims 1, 12, 20, 31, 39, and 50 are allowable over Brown, Kumar, and Caronni. Further, dependent claims 2-7, 9-11, 13-16, 18-19, 21-26, 28-30, 32-35, 37-38, 40-45, 47-49, 51-54, and 56-60 are submitted to be allowable over Brown, Kumar, and Caronni in the same manner, because they are dependent on independent claims 1, 12, 20, 31, 39, and 50, respectively, and because they contain all the limitations of the independent claims. In addition, dependent claims 2-7, 9-11, 13-16, 18-19, 21-26, 28-30, 32-35, 37-38, 40-45, 47-49, 51-54, and 56-60 recite additional novel elements not shown by Brown, Kumar, and Caronni.

IV. CONCLUSION

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.
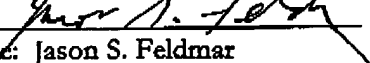
Respectfully submitted,

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